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Horst Wittur

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EXAMINER

PICO, ERIC E

ART UNIT

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3654

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/612,334	Applicant(s) WITTUR ET AL.	
	Examiner ERIC PICO	Art Unit 3654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6-10 and 12-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6-10 and 12-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. **Claims 1 and 6** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

3. **Regarding claim 1**, the subject matter which was not described in the specification “the ratio of the drive sheave diameter to the nominal diameter of said carrier cables is substantially 30”

4. **Regarding claim 6**, the subject matter which was not described in the specification “the ratio of the drive sheave diameter to the nominal diameter of said carrier cables being substantially 34”

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claim(s) 1, 6-10, and 15-17** is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Berkovitz U.S. Patent No. 4030569 in view of Aulanko et al. U.S. Patent No. 5429211, Scholder U.S. Patent No. 5975826, and Wilcox U.S. Patent No. 4624097.

7. **Regarding claim 1**, Berkovitz discloses a gearless cable-operated elevator comprising a drive sheave drive including a drive sheave 26 several parallel carrier cables 24, 25, 42, and a spaced counter sheave 28, the cables being guided from the drive sheave 26 to the counter sheave 28, back to the drive sheave 26, and wrapped around the drive sheave 26 and arranged above or below a cage 20 and a counterweight 22 being attached to the carrier cables, for a machine-room-free installation, characterized in that said carrier cables are steel cables having a nominal diameter of about 12.7 mm and run in semicircular grooves in the sheaves having undercut portions each with a width of about 12.7 mm.

8. Berkovitz is silent concerning guide rails being provided for said cage and said carrier cables having a nominal diameter between 5 to 7 mm and undercut portions each with a width between 1 and 3 mm and that the ratio of the drive sheave diameter to the nominal diameter of said carrier cables is substantially 30.

9. Aulanko et al. teaches a gearless cable-operated elevator comprising a drive sheave drive 6 including a drive sheave 7 several parallel carrier cables 3, and a spaced counter sheave 4, 5, 9, the cables 3 being guided from the drive sheave 7 to the counter sheave 4, 5, 9, and arranged above or below a cage 1 with guide rails 10 being

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provided for said cage 1 and a counterweight 2 being attached to the carrier cables 3, for a machine-room-free installation, characterized in that said carrier cables 3 run in semicircular grooves 102 in the sheaves having undercut portions each with a width.

10. Scholder teaches a carrier cable 75 being steel cables having a nominal diameter between 5 to 7 mm, Column 5, Lines 56 and 57.

11. Wilcox teaches the ratio of the drive sheave diameter to the nominal diameter of said carrier cables is about 24, in its broadest reasonable interpretation substantially 30, Column 3, Lines 24-28; stating “normal sheave/rope ratios (i.e. about 24) and a safety factor of 6, which is commonly used”.

12. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the cage disclosed by Berkovitz with guide rails as taught by Aulanko et al. to guide the cage.

13. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the steel cables having a nominal diameter of about 12.7 mm and running in semicircular grooves in the sheaves having undercut portions each with a width of about 12.7 mm disclosed by Berkovitz a nominal diameter between 5 to 7 mm as taught by Scholder running in semicircular grooves in the sheaves having undercut portions each with a width to between 1 and 3 mm to decrease the ratio of diameter of the drive sheave to nominal diameter of the carrier cables. Furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

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14. It would have been obvious to one of ordinary skill in the art at the time of the invention to characterize the ratio of the drive sheave diameter to the nominal diameter of the carrier cables disclosed by Berkovitz substantially 30 as taught by Wilcox to decrease the diameter of the drive sheave and reduce the torque required to drive the elevator. Furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

15. **Regarding claim 6**, Berkovitz discloses a gearless cable-operated elevator comprising a drive sheave drive including a drive sheave 26 several parallel carrier cables 24, 25, 42, and a spaced counter sheave 28, the cables being guided from the drive sheave 26 to the counter sheave 28, back to the drive sheave 26, and wrapped around the drive sheave 26 and arranged above or below a cage 20 and a counterweight 22 being attached to the carrier cables, for a machine-room-free installation, characterized in that said carrier cables are steel cables having a nominal diameter of about 12.7 mm and run in semicircular grooves in the sheaves having undercut portions each with a width of about 12.7 mm.

16. Berkovitz is silent concerning guide rails being provided for said cage and said carrier cables having a nominal diameter between 5 to 7 mm and undercut portions each with a width between 1 and 3 mm and in that the elevator is configured for cage loads of up to 2000 kg and in that the carrier cables have a nominal diameter of substantially 7 mm, and the ratio of the drive sheave diameter to the nominal diameter of the carrier cables being about 34.

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17. Aulanko et al. teaches a gearless cable-operated elevator comprising a drive sheave drive 6 including a drive sheave 7 several parallel carrier cables 3, and a spaced counter sheave 4, 5, 9, the cables 3 being guided from the drive sheave 7 to the counter sheave 4, 5, 9, and arranged above or below a cage 1 with guide rails 10 being provided for said cage 1 and a counterweight 2 being attached to the carrier cables 3, for a machine-room-free installation, characterized in that said carrier cables 3 run in semicircular grooves 102 in the sheaves having undercut portions each with a width and in that the elevator is configured for cage loads of 800 kg, which is up to 2000 kg.

18. Scholder teaches a carrier cable 75 being steel cables having a nominal diameter of substantially 7 mm, Column 5, Lines 56 and 57.

19. Wilcox teaches the ratio of the drive sheave diameter to the nominal diameter of said carrier cables is about 24, in its broadest reasonable interpretation substantially 34, Column 3, Lines 24-28; stating “normal sheave/rope ratios (i.e. about 24) and a safety factor of 6, which is commonly used”.

20. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the cage disclosed by Berkovitz with guide rails as taught by Aulanko et al. to guide the cage.

21. It would have been obvious to one of the ordinary skill in the art at the time of the invention to configure the passenger elevator system of Berkovitz for useful cage loads of up to 2000 kg as taught by Aulanko et al. to decrease the ratio of diameter of the drive sheave to nominal diameter of the carrier cables. Further, it has been held that

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discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ (CCPA 1980).

22. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the steel cables having a nominal diameter of about 12.7 mm and running in semicircular grooves in the sheaves having undercut portions each with a width of about 12.7 mm disclosed by Berkovitz a nominal diameter between 5 to 7 mm as taught by Scholder running in semicircular grooves in the sheaves having undercut portions each with a width to between 1 and 3 mm to decrease the ratio of diameter of the drive sheave to nominal diameter of the carrier cables. Furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

23. It would have been obvious to one of ordinary skill in the art at the time of the invention to characterize the ratio of the drive sheave diameter to the nominal diameter of the carrier cables disclosed by Berkovitz being substantially 34 as taught by Wilcox to decrease the diameter of the drive sheave and reduce the torque required to drive the elevator. Furthermore, it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ (CCPA 1980).

24. **Regarding claim 7**, Berkovitz is silent concerning the elevator being configured for cage loads between 300 kg and 1000 kg in particular.

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25. Aulanko et al. teaches a passenger elevator system with a load capacity of 800 kg, Column 6, Lines 41-45.

26. It would have been obvious to one of the ordinary skill in the art at the time of the invention to configure the passenger elevator system of Berkovitz for cage loads between 300 kg and 1000 kg as taught by Aulanko et al. Further, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

27. **Regarding claim 8**, Berkovitz discloses said counter sheave 28 serves simultaneously as a distancing deflection sheave 28.

28. **Regarding claim 9**, Berkovitz is silent concerning for adaption to the occurring cable forces alone, the number of applied carrier cables is variable in the drive sheave drive.

29. Aulanko et al. teaches the drive sheave having a plurality of cable grooves 119 on its drive sheave 7 by which the number of applied carrier cables can be varied due to occurring cable forces alone

30. It would have been obvious to one of ordinary skill in the art at the time of the invention to vary the number of applied cables as taught by Aulanko et al. in the drive sheave disclosed by Berkovitz to adapt to the occurring cable forces.

31. **Regarding claim 10**, Berkovitz discloses said drive sheave 26 and said counter sheave 28 of said drive sheave drive are vertically arranged with respect to one another and in the area of a shaft head in the area of a shaft pit.

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32. **Regarding claim 15**, Berkovitz discloses a cage suspension for the elevator is provided with a ratio of 1 to 1.

33. **Regarding claim 16**, Berkovitz is silent concerning a loose pulley cage suspension for the elevator is provided with a ratio of between 2 to 1 and 4 to 1.

34. Aulanko et al. teaches a loose pulley cage suspension for the elevator is provided with a ratio of between 2 to 1 and 4 to 1.

35. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the cage disclosed by Berkovitz with a loose pulley cage suspension a ratio of between 2 to 1 and 4 to 1 to facilitate the lifting of the cage.

36. **Regarding claim 17**, Berkovitz discloses said carrier cables are single-layer round core cables.

37. **Claim(s) 12-14** is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Berkovitz U.S. Patent No. 4030569 in view of Aulanko et al. U.S. Patent No. 5429211, Scholder U.S. Patent No. 5975826, and Wilcox U.S. Patent No. 4624097 as applied to claim 1 above, and further in view of Hollowell International Publication No. 99/43595.

38. **Regarding claim 12**, Berkovitz is silent concerning the drive sheave and the counter sheave of the drive sheave drive are arranged on the bottom or on the roof of the cage.

39. Hollowell et al. teaches an elevator system, characterized in that a drive sheave 30 and a counter sheave 34 of the drive sheave drive are arranged on the bottom of a cage 16.

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40. It would have been obvious to one of ordinary skill in the art at the time of the invention to arrange the drive sheave and the counter sheave of the drive sheave drive disclosed by Berkovitz on the boom of the cage as taught by Hollowell et al. to accommodate the elevator components within the environmental restraints of the shaft.

41. **Regarding claim 13**, Berkovitz is silent concerning the drive sheave drive is fixed to an elevator frame for the elevator.

42. Hollowell et al. discloses an elevator system, characterized in that drive sheave 30 is fixed to an elevator frame 16 for the elevator.

43. It would have been obvious to one of ordinary skill in the art at the time of the invention to fix the drive sheave drive disclosed by Berkovitz to an elevator frame for the elevator as taught by Hollowell et al. to reduce space within the hoistway and facilitate easy access to the elevator drive sheave.

44. **Regarding claim 14**, Berkovitz is silent concerning holding elements for the drive sheave drive are integrated in a cage frame or in a cage main support.

45. Hollowell et al. teaches an elevator system, characterized in that holding elements for the drive sheave 30 are integrated in the cage frame 16.

46. It would have been obvious to one of ordinary skill in the art at the time of the invention to integrate holding elements to the drive sheave drive disclosed by Berkovitz a cage frame as taught by Hollowell et al. to reduce space within the hoistway and facilitate easy access to the elevator drive sheave.

47. **Claim(s) 18 and 19** is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Berkovitz U.S. Patent No. 4030569 in view of Aulanko et al. U.S.

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Patent No. 5429211, Scholder U.S. Patent No. 5975826, and Wilcox U.S. Patent No. 4624097 as applied to claim 1 above, and further in view of Aulanko et al. U.S. Patent No. 5665944.

48. **Regarding claim 18**, Berkovitz is silent concerning a motor of the drive sheave drive is one of a three-phase asynchronous motor or a three-phase synchronous motor.

49. Aulanko et al. U.S. Patent No. 5665944 teaches a three-phase asynchronous and three-phase synchronous drive sheave motor for use in a gearless elevator system. The use of the motor taught by Aulanko et al. U.S. Patent No. 5665944 minimizes the drive sheave as well as adds additional space within the hoistway due to its small size.

50. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the motor disclosed by Berkovitz a three-phase asynchronous or three-phase synchronous drive sheave motor as taught by Aulanko et al. U.S. Patent No. 5665944 to minimize space within the elevator hoistway as well as drive the elevator system

51. **Regarding claim 19**, Berkovitz is silent concerning a motor of the drive sheave drive embodied without mechanical emergency braking device.

52. Aulanko et al. teaches a drive sheave embodied without a mechanical emergency stop braking device to minimize the size of the drive sheave as well as prolong the life span of the drive sheave

53. It would have been obvious to one of the ordinary skill in the art at the time of the invention to make the drive sheave disclosed by Berkovitz a drive sheave embodied

without a mechanical emergency stop braking device as taught by Aulanko et al. to increase the life span of the drive sheave.

Response to Arguments

54. Applicant's arguments filed 11/28/2008 have been fully considered but they are not persuasive.

55. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

56. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., In the elevators, the minimum safety factor requirement is 12) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

57. In response to applicant's argument that there is nothing in the prior art to suggest combining Berkovitz U.S. Patent No. 4030569 in view of Wilcox U.S. Patent No. 4624097 because "Wilcox certainly does not teach to apply arrangements of column 3 lines 5-23 to practical elevators". The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to

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produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. Firstly, it should be noted that there is no requirement that an express, written suggestion to combine must appear in prior art references before a finding of obviousness. In addition to the teachings of the references themselves, the suggestion to combine references may be found in the nature of the problem to be solved or the knowledge of persons of ordinary skill in the art. Furthermore, while there must be a motivation to make the claimed invention, there is no requirement that the prior art provide the same reason as the applicant to make the claimed invention. In this case, the suggestion to combine Berkovitz U.S. Patent No. 4030569 in view of Wilcox U.S. Patent No. 4624097 comes from Column 3, Lines 26-28, "the present invention shows a significantly improved ability to withstand a cyclical flexing under load".

58. In response to applicant's argument, "Wilcox does not teach a ration of [substantially] 30 or substantially 34" Wilcox teaches the ratio of the drive sheave diameter to the nominal diameter of said carrier cables is about 24, in its broadest reasonable interpretation substantially 30 or 34, Column 3, Lines 24-28; stating "normal sheave/rope ratios (i.e. about 24) and a safety factor of 6, which is commonly used". Furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

59.

Conclusion

60. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Pico whose telephone number is 571-272-5589. The examiner can normally be reached on 6:30AM - 3:00PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Cuomo can be reached on 571-272-6856. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EEP

/Peter M. Cuomo/

Supervisory Patent Examiner, Art Unit 3654